CLAIMS:

1. A recombinant nucleic acid which comprises DNA encoding an antigenic peptidic sequence which binds to a Class II *MHC* molecule and DNA encoding the extracellular portion of the β chain of said Class II *MHC* molecule.

2. A recombinant nucleic acid according to claim 1 which further comprises DNA encoding the extracellular portion of the α chain of said Class II *MHC* molecule.

3. A recombinant nucleic acid according to claim 1, wherein said Class II *MHC* β chain lacks a complete transmembrane region.

4. A recombinant nucleic acid according to claim 2, wherein said Class II *MHC* β chain and said Class II *MHC* α chain lack complete transmembrane regions.

5. A recombinant nucleic acid according to claim 1, wherein said peptidic sequence which specifically binds to a Class II *MHC* molecule is an autoantigen.

6. A recombinant nucleic acid according to claim 5, wherein said autoantigen is a multiple sclerosis autoantigen.

7. A recombinant nucleic acid according to claim 5, wherein said autoantigen is an experimental autoimmune encephalomyelitis autoantigen.

8. A recombinant nucleic acid according to claim 5, wherein said autoantigen is a diabetic autoantigen.

9. A recombinant nucleic acid of claim 8, wherein said diabetic autoantigen is a fragment of glutamic acid decarboxylase.

10. A recombinant nucleic acid of claim 9, wherein said fragment of glutamic acid decarboxylase comprises a sequence selected from SEQ ID NOS: 1-13 or immunologically equivalent variants or fragments thereof.

11. A recombinant nucleic acid of claim 1, wherein said DNA encoding a peptidic sequence which specifically binds to said Class II *MHC* molecule encodes SEQ ID NO: 1.

12. A recombinant nucleic acid of claim 1, wherein said DNA encoding a peptidic sequence which specifically binds to said Class II *MHC* molecule encodes SEQ ID NO: 2.

13. A recombinant nucleic acid of claim 1 which further comprises DNA encoding a biotinylation site.

14. A recombinant nucleic acid of claim 1 which further comprises DNA encoding an oligohistidine sequence.

15. A recombinant nucleic acid of claim 2 which further comprises DNA encoding a biotinylation site.

16. A recombinant nucleic acid of claim 2 which further comprises DNA encoding an oligohistidine sequence.

17. A recombinant protein which is encoded by the recombinant nucleic acid of claim 1.

18. A recombinant protein which is encoded by the recombinant nucleic acid of claim 2.

19. A recombinant protein which is encoded by the recombinant nucleic acid of claim 9.

20. A recombinant protein which is encoded by the recombinant nucleic acid of claim 10.

21. A recombinant protein which is encoded by the recombinant nucleic acid of claim 11.

22. A recombinant protein which is encoded by the recombinant nucleic acid of claim 12.

23. A recombinant protein which comprises a preselected peptidic antigen which binds to a Class II *MHC* molecule, the extracellular portion of a β chain of said Class II *MHC* molecule, and the extracellular portion of an α chain of said Class II *MHC* molecule.

24. A recombinant protein according to claim 23 which further comprises a biotinylation site.

25. A recombinant protein according to claim 23 which further comprises an oligohistidine sequence.

26. A recombinant protein according to claim 23 wherein said peptidic sequence is an autoantigen.

27. A stable molecular complex which comprises a recombinant protein according to claim 17.

28. A stable molecular complex which comprises a recombinant protein according to claim 18.

29. A stable molecular complex which comprises a recombinant protein according to claim 23.

30. A stable molecular complex which comprises a recombinant protein according to claim 24.

31. A stable molecular complex which comprises a recombinant protein according to claim 25.

32. A stable molecular complex according to claim 30 which further comprises a biotin covalently linked to said recombinant protein.

33. A stable molecular complex according to claim 30 which further comprises an effector-avidin bound to said biotin.

34. A stable molecular complex according to claim 33, wherein said effector is selected from a label and a toxin.

35. A stable molecular complex according to claim 23, wherein said peptidic antigen is a diabetic autoantigen.

36. A method of detecting T cells which recognize a preselected peptidic antigen in a population of T cells which comprises:

(a) providing a stable molecular complex according to claim 28, wherein said peptidic sequence is said preselected peptidic antigen and wherein said stable molecular complex is labeled;

(b) incubating said stable molecular complex with said population of T cells under conditions such that said stable molecular complex binds to T cells in said population of T cells which recognize said preselected peptidic antigen;

(c) optionally removing unbound complexes; and

(d) detecting said labeled complexes on said T cells which recognize said preselected peptidic antigen.

37. A method of detecting T cells which recognize a preselected peptidic antigen in a population of T cells according to claim 36 which further comprises, between steps (a) and (b), stimulating said population of T cells by contacting said T cells with said preselected peptide antigen or allogeneic antigen presenting cells which present said preselected peptidic antigen.

38. A method of diagnosing a diabetic or pre-diabetic condition in a mammal which comprises:

(a) obtaining a sample which contains a population of T cells from said mammal;

(b) providing a stable molecular complex according to claim 28, wherein said antigenic peptidic sequence is a diabetic autoantigen;

(c) incubating said stable molecular complex with said sample under conditions such that said stable molecular complex binds to T cells in said sample which recognize said diabetic autoantigen;

(d) optionally removing unbound complexes; and

(e) determining whether said stable molecular complex has bound to any T cells in said sample.

39. A method of diagnosing a diabetic or pre-diabetic condition in a mammal according to claim 38 which further comprises between steps (a) and (b), stimulating said sample of T cells by contacting said T cells with said preselected peptide antigen or allogeneic antigen presenting cells which present said preselected peptidic antigen.

40. A method according to claim 36, wherein said conditions of incubation include addition of anti T cell receptor antibody.

41. A method according to claim 37, wherein said conditions of incubator include addition of anti T cell receptor antibody.

42. A method according to claim 38, wherein said anti T cell receptor antibody is present at a concentration of about 0.1 µg per $10^6$ cells to about 10 µg per $10^6$ cells.

43. A method according to claim 39, wherein said anti T cell receptor antibody is present at a concentration of about 0.1 µg per $10^6$ cells to about 10 µg per $10^6$ cells.

44. A method of inducing tolerance to a preselected peptidic antigen in a population of T cells which comprises:

(a) providing a stable molecular complex according to claim 28; and

(b) contacting said stable molecular complex with said T cells.

45. A method of inducing or expanding protective clones of T cells which recognize a preselected antigen in a population of T cells which comprises:

(a) providing a stable molecular complex according to claim 28; and

(b) contacting said stable molecular complex with said T cells.

46. A method of killing T cells which recognize a preselected peptidic antigen in a population of T cells which comprises:

(a) providing a stable molecular complex according to claim 34 wherein said effector is a toxin; and

(b) contacting said stable molecular complex with said T cells.

47. A method of vaccinating a patient against a preselected peptidic antigen which comprises:

(a) providing a stable molecular complex according to claim 23; and

(b) administering said stable molecular complex to said patient wherein specific T cell clones recognizing said preselected peptidic antigen are expanded.

48. A method of inhibiting the onset of diabetes in a mammal in need thereof, which comprises:

(a) providing a stable molecular complex according to claim 28, wherein said antigenic peptide sequence is a diabetic autoantigen;

(b) contacting said stable molecular complex with a population of T cells allogeneic to said mammal under conditions such that said stable molecular complex binds to

T cells in said population that recognize said diabetic autoantigen;

(c) separating from said T cell population T cells that bind to said stable molecular complex; and

(d) administering said separated T cells to said mammal.